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ABSTRACT

The work of eight learning theorists was used to evaluate a proposed adult education/learning experience in an effort to operationalize a system for locating strengths and weaknesses in an instructional system prior to its implementation. Thirty-five implications for adult education were extrapolated from work representing the Behaviorist (B.F. Skinner), Neobehaviorist (Clark Hull, Donald Hebb, Albert Bandura, Robert Gagne), Cognitive (Jerome Bruner, David Ausubel), and Humanist (Carl Rogers) schools of learning. These implications were used as an evaluation tool through a seven-step process in which they were scored on a three-point scale. An adult education program was evaluated that was made up of four separate instructional units. Scale scores for each instructional unit were contrasted to locate units that used greater or lesser amounts of learning theory. Usage of individual implications were noted, and average number of implications per theorist was computed and used to identify high and low use of a theorist. The process identified strengths and weaknesses in the proposed instructional units in terms of adult learning theory, thus allowing for a restructuring of the learning experience before its presentation. (The tally sheet of scores is provided.) (YLB)

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EVALUATING A PROPOSED LEARNING EXPERIENCE IN TERMS OF EIGHT LEARNING THEORIES

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ABSTRACT

The work of eight learning theorists was used to evaluate a proposed adult education learning experience in an effort to operationalize a system for locating strengths and weaknesses in an instructional program prior to its implementation. Thirty-five specific implications for adult education were scored on a 3-point scale using 4 instructional units. Scale scores were contrasted and interpretation of the scores were made. The process identified strengths and weaknesses in the proposed instructional units in terms of adult learning theory allowing for a restructuring of the learning experience before its presentation.

EVALUATING A PROPOSED LEARNING EXPERIENCE IN TERMS OF EIGHT LEARNING THEORIES*

Evaluation is a valuable tool for improving adult learning experiences. However, most evaluations are summative. That is, evaluation is done at the close of the learning experience. Summative evaluation is valuable in collecting data useful for improving future learning experiences. However, summative evaluation cannot supply information during the design phase of a particular unit of instruction when changes may also be helpful. This paper is an attempt to operationalize a method of evaluation that can be applied to a learning experience literally "still of the drawing board."

According to Kidd(3) learning theory should be a distillation of good practice. In effect, Kidd appears to be saying that learning theory is an extraction of those features of the learning/teaching experience that apply over a goodly number of learning experiences. Or, stated another way, learning theory has generalizability over learning experiences. As such, learning theory would appear to be an excellent reference criterion against which to evaluate a proposed adult learning experience.

As every adult educator knows, there is no one adult learning theory. Traditionally, adult learning theory has been pieced together from major psychological and educational learning theorists. Often the major learning theorists have constructed their theory using data collected on children and/or animals under environmental conditions that often are different than those experienced by adults. Because of these differences not all general learning theories apply equally well

to adults. As a result, the major writers in the area of adult learning theory usually present the state-of-the-art by extrapolating those features from the general learning theory they judge to be most appropriate to adult education (1), (2), (3).

It is with this background in learning theory that the author has attempted to use adult learning theory as a reference criterion against which to evaluate an adult learning experience during the design phase.

35 Implications for Adult Education

Dubin and Okun (1) have reviewed the work of eight major learning theorists and extrapolated 35 implications for adult education.

Eight of the 35 implications were drawn from the work of B. F. Skinner who represented the Behaviorist school of learning. Behaviorists concern themselves primarily with stimuli and responses.

Thirteen of the implications were drawn from the Neobehaviorist school of learning. Neobehaviorists concern themselves with stimuli and responses as well as with mediational processes. Of the 13 implications drawn from Neobehaviorists four came from the work of Clark Hull, three from the work of Donald Hebb, three from the work of Albert Bandura, and three from the work of Robert Gagne.

Seven implications were drawn from the Cognitive school of learning which is primarily concerned with rule formation and use. Three of the seven implications were taken from the work of Jerome Bruner and four from the work of David Ausubel.

The final four implications were drawn from the work of Carl Rogers who represented the humanist school of learning which is concerned with helping individuals develop their own teaching/learning skills.

Using Dubin and Okun's 35 Implications to Evaluate a Proposed Adult Education Program

Dubin and Okun's list of 35 implications for adult education can be used as an evaluation tool through a seven step process described below. Table 1 gives an example by evaluating an adult education program made up of four separate instructional units.

Step 1. List the 35 implications for adult education on the left side of a page and draw two more columns than there are individual units of instruction to the right of the list. Label one of these additional columns "total" and the other "average use of theorists' work."

Step 2. Contrast each proposed unit of instruction against each of the 35 implications. Use the following index:

(a) Place a 2 in the column where the implication is strongly (frequently) used.

(b) Place a 1 in the column where the implication is weakly (occasionally) used.

(c) Place a 0 in the column where the implication is not used.

Step 3. Tally the number of points for each unit of instruction (i.e., tally the columns).

Step 4. Tally the number of points for each individual implication (i.e., tally the rows).

Step 5. Circle the tallies for all implications (row tallies) that fall in the top one-third of possible scores. For example, in Table 1, scores could range from zero to eight (four units of instruction with a two point maximum; range of scores 0-8). Consequently, in this example one would circle 6, 7, and 8.

Step 6. Draw a square around all implications that fall in the lowest one-third of possible scores. (In this example 0, 1, and 2).

Step 7. Tally the scores for all of the implications for a particular theorist and divide by the number of implications per theorist to obtain the average use of the theorists' work. Place this data in the far right column.

------Place Table 1 about here ------

Interpreting the Evaluation

The following suggestions are made for interpreting the data in Table 1.

Interpretation of Column Tallies

The column tallies indicate the number and extent to which the 35 implications have been put to use in each proposed instructional unit. In the example given in Table 1 the proposed units of instruction using the least theory were units 1 and 3 (scores of 34 and 35) and the proposed unit of instruction using the most theory were units 2 and 4 (scores of 45 and 41). A review of the proposed instructional units revealed that the first proposed unit was light on theory as a result of being the first in a series of units. Consequently, much of the time was planned to acquaint people with each other and the objectives of the total program. Consequently, restructure of the proposed unit was not considered important.

A review of the instructional procedures in the third unit revealed that it contained activities structured more to create busy work than to facilitate learning. Consequently, modifications were made. A reevaluation (not shown) yielded a score of 50.

Interpretation of the Tallies for each Individual Implication and of the Average Number of Implications Per Theorist

The tally for each individual implication indicated to what extent each of the 35 implications were used over the entire program. Circled numbers represented high use of an implication. Numbers with squares represented low use of an implication.

The total tally per theorist divided by the number of implications per theorist gave the average use of a theorists' work. Theorists used most and least often were identified.

Over a series of evaluations an adult educator could identify a personal pattern in the use of specific implications or the work of a special theorist. Thought could be directed toward strengthening ones' knowledge of a theory and/or of strategies for incorporating the use of these implications into future instruction.

SUMMARY

The 35 implications for adult education that Dubin and Okun drew from the work of eight major learning theorists were used as a means of evaluating a proposed adult education program prior to its implementation. A seven step process was outlined which required the evaluator to judge each individual instructional unit in a total program against each of the 35 implications using a scale of 2, 1, or 0 depending upon the extent each implication was used.

Tallies for each instructional unit (column tallies) were contrasted against each other to locate units that used greater or lesser amounts of learning theory. Weak instructional units were identified for further development.

Row tallies were interpreted in two ways. First, high and low usage of individual implications were noted. Second, the average number of implications per theorist was computed and used to identify high and low use of a theorist. Knowledge of low use of specific implications or general theory could identify an area to which program planner might wish to direct some attention.

References

(1) Dubin, S. S. and Okun, Morris. Implications of Learning Theories for Adult Education. Adult Education, 1973, 24, 3-17.

(2) Knowles, M. S. The Adult Learner: A Neglected Species. Gulf Publishing Company, 1973.

(3) Kidd, J. R. How Adults Learn. New York: Association Press, 1973.

Table 1. Tally Sheet for Evaluating a Proposed Learning Experience in Terms of Eight Learning Theories

Learning Theorist Specific Implications	Proposed Unit Of Instruction					Average Use Of Theorists' Work
	1	2	3	4	Total	
B. F. Skinner						
1. Do not use adversive stimuli.	2	1	0	2	5	
2. Do not reinforce undesired behavior.	2	2	2	2	(8)	
3. In the early stages of learning reinforce every desired response. Once learning is proceeding as expected, switch to a "VR" schedule.	1	1	1	2	5	
4. Reinforce immediately, especially in early phases.	0	2	0	0	[2]	
5. Establish convenient secondary reinforcers that are facile to employ at any time.	0	0	1	0	[1]	
6. Extinguish undesired responses by withholding reinforcement.	1	1	1	1	4	
7. When shaping the behavior of individuals, develop very carefully the hierarchical arrangement of responses.	2	2	1	2	(7)	
8. When the student fails, share the responsibility.	0	0	1	1	[2]	
			Total	Skinner	34	4.25
Clark Hull						
1. As a first step in learning, identify and climinate competitive responses.	0	1	0	0	[1]	
2. Introduce a variety of techniques for solving problems.	2	2	2	2	(8)	
3. Determine the relative need for practice at each step in a sequential act and implement differential practices until all parts of the task are equally well learned.	1	0	0	0	[1]	
4. Consider learning as a rearrangement of responses within a habit-family hierarchy such that when the individual is presented with a stimulus, the correct answer has become the most dominant response in that particular habit-family.	1	0	0	0	[1]	
			Total	Hull	11	2.75

Table 1. Continued

Donald Hebb
1. When the background for adequate achievements is missing, supply the background before worrying about achievement.
2. Analyze a skill or lesson into components and teach the components separately.
3. Whenever feasible, train learners in the use of mediational devices.

0	2	2	2	(6)	
0	2	1	2	5	
0	2	2	2	(6)	
		Total Hebb		17	5.67

Albert Bandura
1. Expose individuals to a wide range of alternatives so that they can decide for themselves who are appropriate models.
2. Utilize many types of instructional devices since symbolic models are very effective.
3. Do not necessarily require the student to perform in order to learn.

2	2	2	2	(8)	
0	2	2	1	5	
2	1	1	1	5	
		Total Bandura		18	6.00

Robert Gagne
1. Make the instructional sequence parallel the hierarchy of knowledge in any given area.
2. Make the instructional objectives specific.
3. Assess the learning situation in informal and formal modes as an important source of feedback for the instructor as well as the learner.

0	0	0	0	[0]	
2	2	2	2	(8)	
2	1	0	2	5	
		Total Gagne		13	4.33

Jerome Bruner
1. Utilize a spiral curriculum whenever possible.
2. Encourage educated guessing.
3. See that instructional sequence progresses from enactive to iconic to symbolic.
4. Generic codes are likely to develop when training is diverse.

0	1	0	0	[1]	
1	2	1	0	4	
0	1	0	0	[1]	
0	1	2	1	4	

Table 1. Continued

Jerome Bruner (Continued) 5. As instruction proceeds, encourage the student to assume more responsibility for learning. 6. Use inductive approach; build from specific category to a coding system.	1	2	2	2	(7)	
	1	1	1	1	4	
			Total	Bruner	21	3.50
David Ausubel 1. Organize material in a form which will be meaningful to the students. In order to accomplish this, use various kinds of organizers.	2	2	2	2	(8)	
2. Recognize that the more distinct the new information is from the already learned material, the greater the dissociability of the material (i.e., it will be retained longer).	1	2	1	2	(6)	
3. Make sure that the learner is ready to learn. This means that the individual's cognitive structure must be assessed beforehand so that material is introduced at the appropriate level.	1	2	0	0	3	
4. Use deductive model: start with global approach and integrate specifics.	0	0	0	0	[0]	
			Total	Ausubel	17	4.25
Carl Rogers 1. Interact with students in a genuine, accepting and emphatic manner.	2	2	2	2	(8)	
2. Expect and respect individual differences among learners.	2	1	2	2	(7)	
3. Take into account the individual needs of the pupils; see that students share the responsibility for the content and format of the course.	2	1	1	1	5	
4. Develop self-evaluative students, and when criticizing the adult, do so in the form of constructive suggestions.	1	1	0	2	4	
			Total	Rogers	24	6.00
Grand Total	34	45	35	41	155	